

Note on Espin's List of New Double Stars. By Eric Doolittle.

This interesting list of the most recent discoveries, which appears in the *Monthly Notices*, 79, 212-217, comprises 71 pairs found by Espin and 79 pairs discovered by Milburn—150 pairs altogether. The following errata and identities may be noted:—

Espin 1741. The Decl. is 4' too large.

1758. This triple was first measured by Fox (*Annals, Dearborn Obs.*, i.).

1911·73 179°·6 5"·42 10·0 11·7 AB 3n.

1911·75 347 ·5 29 ·03 10·5 AC 2n.

Milburn 47. The number of nights is omitted in AC.

55. This is Roe 76. The position from measures from DM 40° (783), 8·8 magnitude, is (1880·0), R.A. = 3 hrs. 26 min. 0·8 secs.; Decl. = 40° 23'·5. The only prior measure is by Roe:—

1914·11 30°·4 4"·18 9·5 9·8 3n (A.N., 4762).

64. This was discovered by Pettit in 1916 (= Pettit 11). His measure is:—

1916·85 6°·6 4"·24 9·1 10·4 3n (A.J., 715).

68. Identical with Jonckheere 1023, but the identification of this was erroneous in *J.A.*, ii. p. 16. That given by Milburn is correct. The pair is also A.G. Lund, 5451, 9·5 magnitude. The earliest measure is:—

1911·75 171°·6 4"·20 9·3 9·5 Jonckheere 2n.

96. Identical with Doolittle 18 (*General Catalogue*, 11780), but the identification in the *G.C.* is in error. That given here is correct. The only prior measure is:—

1899·11 44°·8 2"·70 9·2 10·5 Doolittle 4n - 3n.

103. The angles by Milburn and Espin differ by 16°·2. Misprint in one of the measures (?).

The Flower Observatory:
1919 March 28.

A New Variable Star in Ursa Major. By Rev. T. E. Espin.

In the course of the zone observations with the 17 $\frac{1}{4}$ -in. reflector, Mr. W. Milburn has been giving particular attention to the red stars. The star B.D. + 59° 1401, which in the B.D. is entered as of mag. 9.3, I observed 1894 March 24 as 8.6 mag. Mr. Milburn has made the following recent observations of it:—

1919 March 5, 9.0.
 April 9, 9.0.
 April 12, 9.0.

On April 18 I made it 8.8 with the 24 in.

A series of four negatives made by Mr. Lawrence Richardson, covering this region, were examined by Mr. Milburn, also one by Mr. Offord, and plates 67 and 68 of the Harvard Map of the Sky, and show conclusively that the star is variable. The star B.D. + 59° 1398 was compared with certain stars whose photometric magnitudes are given in *H.A.*, 70, and the magnitudes estimated at 9.7, while a star not in the B.D., but which by rough measures on the photographs is 15 sec. *p*, and 4' *s* of the variable, was in the same way estimated as 10.7. Mr. Milburn then compared the variable with these stars, with the following results:—

1901 April 22,	10.0.	Offord's photo.
1902 May 1,	10.5.	Harvard Map of the Sky.
1905 Feb. 26,	9.9.	" " "
1916 March 31,	10.4.	Richardson's negative.
1916 April 4,	10.0.	" "
1917 March 17,	10.6.	" "
1917 April 17,	10.8.	" "

The results show quite conclusively that the star is variable.

The spectrum was observed by me as Bands? III. ? 1894 March 24, *A.N.*, 3286, where it is numbered 988.

The place is:—11^h 39^m 13^s.6 + 59° 2' 3", 1855.

11^h 41^m 40^s + 58° 47' 6", 1900 (Krüger, *Neuer Kat. Farb. Sterne*, No. 2656).